

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 09-270227  
(43)Date of publication of application : 14.10.1997

(51)Int.Cl. H01J 1/30  
G09G 3/22  
H01J 9/02  
H01L 49/00

(21)Application number : 08-104466 (71)Applicant : CANON INC  
(22)Date of filing : 29.03.1996 (72)Inventor : DEN TORU

## (54) ELECTRIC FIELD ELECTRON EMITTING ELEMENT, AND MANUFACTURE OF IT

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a very stable emission electric current, by containing at least diamond and fullerene in an emitter part, in an electric field electron emitting element.

**SOLUTION:** An emitter 3 is constituted of a diamond layer 51, a junction layer 52 containing fullerene, and a conductive layer 53 for electrically connecting between an element electrode 2 and the junction layer 52. When the junction layer 52 has the function of the conductive layer 53, the function of the conductive layer 53, the conductive layer 53 is not necessary. The emitter 3 has diamond on a surface, and the fullerene is joined to at least part of the element electrode 2 or the conductive layer 53. In the electric field emission element, the fullerene is preferably C60 or C70. This can increase the electron emission quantity of the element, and can obtain a long life electric field emission element.



### LEGAL STATUS

[Date of request for examination] 19.12.2000

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number] 3372751

[Date of registration] 22.11.2002

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]